

ABSTRACT

A time-resolved measurement apparatus (100) reads a detection timing pulse from an MCP (24) in a front-side MCP stack (30) in a photomultiplier tube (14). A detection timing of a photon is determined based on this pulse. A principal component of this pulse is a potential rise pulse in response to the emission of photoelectrons from the MCP (24), and it has the positive polarity. On the other hand, when photoelectrons are incident on the front-side stack (30), a pulse of the negative polarity is generated to deform the waveform of the detection timing pulse. However, since the number of the photoelectrons incident on the front-side stack (30) is fewer than that of those incident on a rear-side stack (32), the negative component is small in the detection timing pulse. This results in enhancing the time precision of the time-resolved measurement.